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47. (Amended) The system of claim 46, wherein each load lock chamber comprises: an enclosure having a bottom, a lid and sidewalls defining a chamber cavity; and a transfer robot disposed in each load lock chamber adjacent the bottom and the

lid.

- 48. The system of claim 47, wherein a central portion of each chamber cavity has a diameter slightly larger than a diameter of a substrate to be received in the system.
- 49. The system of claim 47, wherein each load lock chamber is connected to the single process chamber in a linear configuration.
- 50. The system of claim 47, wherein the load lock chamber further comprises: one or more perforations disposed in the bottom thereof; and one or more lift pins slidably disposed through the one or more perforations.



- 51. (Amended) The system of claim 50, wherein the load lock chamber further comprises a cover having an opening and the lid is adapted to substantially cover the opening.
- 52. The system of claim 51, wherein the lid further comprises at least one stabilizing rod disposed through the lid and connected to the cover.
- 53. The system of claim 52, wherein the lid further comprises a bellow sleeves disposed around a lower portion the stabilizing rod.
- 54. The system of claim 46, further comprising a vacuum pump connected to the load lock chamber.
- 55. The system of claim 48, wherein the load lock chamber further comprises: an elongated substantially rectangular aperture; and a hermetic sealing apparatus adapted to substantially cover the aperture.

56. (Amended) A semiconductor processing system for processing substrates, comprising:

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a mini-environment coupled to a wafer cassette;

a robot disposed within the mini-environment;

one or more load lock chambers connected to the mini-environment, each load lock chamber comprising:

an enclosure having a bottom, a lid and sidewalls defining a chamber cavity having a central portion having a diameter slightly larger than a diameter of the substrates to be received in the system; and

a transfer robot disposed in each load lock chamber, wherein each transfer robot comprises:

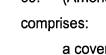
one or more actuators;

a linkage; and

a substrate support means; and

one or more process chambers connected to the one or more load lock chambers, wherein each load lock chamber is connected to a single process chamber.

- 57. (Amended) The system of claim 56, wherein each load lock chamber is fluidly so connected to the single process chamber via a substantially rectangular aperture.
- 58. The system of claim 57, wherein the load lock chamber further comprises a hermetic seal adapted to substantially cover the aperture.



59. (Amended) The system of claim 58, wherein the load lock chamber further comprises:

a cover having an opening and the lid is adapted to substantially cover the opening.

60. The system of claim 59, further comprising:

a transfer assembly adapted to transfer the substrates to a plurality of positions.

- 61. The system of claim 59, wherein the load lock chamber further comprises: one or more perforations disposed in the bottom; and one or more lift pins slidably disposed through the perforations.
- 62. The system of claim 61, wherein the lift pins are coupled at one end to a linear actuator.
- 63. The apparatus of claim 56, wherein a vacuum pump is in fluid communication with the load lock chamber.
- 64. The system of claim 61, wherein the lid further comprises:
  at least one stabilizing rod disposed through the lid and connected to the cover;
  and
  a bellow sleeves disposed around a lower portion the stabilizing rod.
- 65 (New) A semiconductor processing system, comprising:
  a wall defining a mini-environment fluidly coupled to a wafer cassette containing one or more wafers;

at least one robot disposed within the mini-environment and accessible to the wafer cassette via an opening in the wall;

one or more load lock chambers connected to the mini-environment, wherein the load lock chambers comprise a lid, bottom, and sidewall to define an enclosure having an inside diameter slightly larger than the a wafer to be received therein;

one or more process chambers fluidly coupled to the one or more load lock chambers, wherein each load lock chamber is connected to a single process chamber.

66. (New) The system of claim 65, a slit valve positioned between each load lock chamber and its process chamber to provide a vacuum seal therebetween.



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- 67. (New) The system of claim 65, wherein each lid is movable in a vertical direction relative the bottom.
- 68. (New) The system of claim 65, wherein the robot is disposed external to the one or more load lock chambers.
- 69. (New) The system of claim 65, further comprising an internal robot disposed within each load lock chamber and in communication with the single process chamber coupled thereto.
- 70. (New) The system of claim 65, further comprising a lifting apparatus configured to shuttle substrates from the mini-environment to the one or more load lock chambers.
  - 71. (New) A semiconductor processing system, comprising:
    - a mini-environment coupled to a wafer cassette;
    - a robot disposed within the mini-environment;
    - a plurality of load lock chambers connected to the mini-environment; and
    - a plurality of process chambers, each connected to a single load lock chamber.
  - 72. (New) A semiconductor processing system for processing substrates, comprising:
    - a mini-environment coupled to a wafer cassette;
    - a robot disposed within the mini-environment;
  - a plurality of load lock chambers connected to the mini-environment, each load lock chamber comprising:
  - an enclosure having a bottom, a lid and sidewalls defining a chamber cavity having a central portion having a diameter slightly larger than a diameter of the substrates to be received in the system; and
  - a transfer robot disposed in each load lock chamber, wherein each transfer robot comprises:

one or more actuators;